

Engaging a Climate Ready Agency

From Dave Cleaves, Forest Service Climate Change Advisor



MAY 25, 2011

Summer is nearly upon us and for many the field season has already begun, which presents an array of new opportunities to think about and integrate climate change considerations into our work. As the summer progresses, please keep on sharing the details of your climate change related field work, management activities, research, and communications so that we can continue to learn from each other. (See submission details in the last section of this update.)

If you want to make sure that you continue to receive these updates, please sign up for our climate change [listserv](#)—we'll send an email to announce when a new update is available on the [Climate Change Advisor's website](#). You can also direct partners to this website so they can sign up for the listserv. (It's not the kind of listserv that will flood you with tons of email.) Previous editions of the updates are also posted on the website.

MESSAGE FROM DAVE

This month, we have a guest essayist filling in for Dave. Jennifer Kane works in Region 10 as a partnership coordinator in the public affairs office of the Tongass National Forest and is a member of the Tongass Climate Change Team. She is on detail to the Climate Change Advisor's Office this spring.

The Way We Talk About Climate Change

My grandmother is ninety-seven years old. Over roughly the span of her life, the global average temperature has increased by about one and a third degrees Fahrenheit. I've never talked with her about climate change, but recently, I've been thinking about how that conversation might start and what information I could give to her.

Perhaps I could tell her that the Intergovernmental Panel on Climate Change estimates that the average global temperature has risen by 0.74 degrees Celsius between 1906 and 2005, with very high confidence that some percent of this is due to anthropogenic sources of greenhouse gases. As a result, changes in precipitation, date of first frost, and date of snowmelt are occurring around the world, and the frequency of heavy precipitation events and the frequency of heat waves are increasing. Forests in the U.S. are experiencing a range of impacts, including increased size and severity of fires, insect infestations and disease, invasive species, and tree mortality. As the climate continues to warm, these changes will intensify, due to direct effects from climate change and the amplification of existing stressors.

I imagine that at this point my grandmother will be looking at me blankly and might be kind of depressed. Or she'll have no sense at all of how this relates to her or me or either of our lives, other than the fact that it is of obvious concern to me, and I am her granddaughter. She would probably prefer to be talking about her recipe for eggplant parmesan, and I'll be wondering why I just told my grandmother about climate change. I've totally missed my audience.

In our work, we may have many opportunities to talk about climate change and to different people. This may include speaking with the public during interpretive activities at visitor centers or

campgrounds, or perhaps it is with community partners, seasonal employees, or volunteers. In other instances, we may talk about climate change with technical specialists and researchers or with representatives of other agencies and congressional committees. In each of these situations, it is important that we consider our audience. The way we talk about climate change matters.

I would also add that the reason we talk about climate change matters. In some cases, the intention of our communication is solely to provide information. This may especially be the case during technical discussions or in briefing papers. However, our desire to provide information often has a deeper intention, of which we may or may not be aware. The frequently expressed aim to “raise awareness” or “increase understanding” of any given issue is often our chosen strategy to meet a goal that requires changes by our audience: to increase their support, to increase their funding, or even for them to help resolve the issue. We want to communicate because we want action from other people. However, many behavioral studies have indicated that information alone is often not enough to motivate action.

The social sciences can tell us much about effectively communicating about climate change, and many of these recommendations are outlined in the references listed in the “Recommended Readings” section of this update, including an excellent publication entitled *The Psychology of Climate Change Communication*. I’ll highlight a few of those recommendations here:

- *Use audience-appropriate language and numbers:* Avoid the use of jargon and define complex terms when their use is essential. Put statistics into units that are meaningful to the audience.
- *Make it personally relevant:* Design messages that highlight how climate change relates to people and their personal experiences.
- *Make it local:* Use local examples of climate change impacts, which are more likely to create connections with the issue than national or global examples.
- *Provide a possible action in response:* Couple your description of climate change impacts with a manageable action that your audience can undertake, even if this action makes just a small contribution to mitigating climate change. Describing a threat without empowering your audience can lead to their ignoring or dismissing the issue.
- *Make changing easier:* If what you really want is for your audience to change, find out what they perceive are the barriers to changing, and try to remove those barriers.

With all of this in mind, perhaps what I could instead say to my grandmother is that a group of scientists from around the world who study changes in the climate estimate that the average temperature of the planet has risen about one and a third degrees Fahrenheit in her lifetime, and they are very confident that this is in part due to man-made emissions of gases from sources like cars and the production of electricity. This might not sound like a lot, but small changes in this average temperature can affect things like the amount of rain and snow and the length of seasons. In the U.S., winters are getting warmer and the Southwest is becoming drier, while the East is getting cloudier and wetter. Warmer temperatures have also been linked to a longer ragweed pollen season, which means that allergy seasons may also last longer. However, we can help lessen these changes by doing things like carpooling, conserving electricity at home and at work, and encouraging our friends and families to do the same. At the Forest Service, we’re working to reduce the amount of energy and other resources that we use and to help forests and grasslands adapt to climate change.

It’s a start, and it’s much better. I think she’d think so too.

HIGHLIGHTS FROM THE SCORECARD

In this section, we feature accomplishments by national forests and grasslands related to one of the Climate Change Performance Scorecard elements.

Element 5 – External Partnerships

The **Chugach National Forest** (R10) and the University of Alaska Anchorage co-hosted "[Classrooms for Climate: A Symposium on the Changing Chugach, Northern Ecosystems, and the Implications for Science and Society](#)" May 4-7 in Anchorage, AK. Additional partners included the Alaska Coastal Rainforest Center, Alaska Geographic, and the Northern Forum. This symposium featured more than one hundred presenters and was a first step in bringing together partners in inquiry, education, and management from across Southcentral Alaska and beyond. Audio podcasts with some featured speakers, including urban green collar jobs expert Majora Carter and FS Climate Change Advisor Dave Cleaves, can be found [here](#). A radio interview with Dave Cleaves, Majora Carter, and Chugach National Forest Partnerships and Public Affairs Staff Officer Sara Boario is available [here](#). For more information on the symposium, please contact Sara Boario (sboario@fs.fed.us).

The **Beaverhead-Deerlodge**, **Bridger-Teton**, **Caribou-Targhee**, **Custer**, **Gallatin**, and **Shoshone National Forests** (R1, R2, and R4) have partnered with Yellowstone and Grand Teton National Parks and the National Elk Refuge and Red Rock Lakes National Wildlife Refuge to form a Climate Change Adaptation Subcommittee to coordinate and advance climate change response in the Greater Yellowstone Area. This newly formed subcommittee includes specialists from existing subcommittees of the [Greater Yellowstone Coordinating Committee](#) (GYCC), as well as Forest Climate Change Coordinators, other interested agency staff, the Bureau of Land Management, and the Great Northern Landscape Conservation Cooperative. The GYCC was formed in 1964 to pursue opportunities of mutual cooperation and coordination in the management of the core federal lands in Greater Yellowstone. For more information on the GYCC Climate Change Adaptation Subcommittee, contact Virginia Kelly (vkelly@fs.fed.us) or Michael Fiebig (mtfiebig@fs.fed.us).

FROM THE WASHINGTON OFFICE

International Seminar on Climate Change and Natural Resource Management

Forest Service International Programs hosted participants from around the world in early May during the DC portion of the [International Seminar on Climate Change and Natural Resources Management](#). The seminar runs May 8 through 29, 2011 and is cosponsored by International Programs, the University of California Davis, and Training Resources Group. The course is designed for natural resources managers with a professional interest in climate change issues who wish to participate in an engaging, interactive, and highly informative training and field study program. Attendees will learn about assessment, monitoring, adaptation, and mitigation practices for managing natural resources in the face of climate change and its potential effects on natural resources and will be introduced to policy and technological developments in carbon markets and offsets. They will also visit field sites in California, including Yosemite National Park and the Lake Tahoe basin. For more information, please contact Rima Eid (reid@fs.fed.us).

National Workshop on Climate and Forests

FS Climate Change Advisor Dave Cleaves spoke about “Engaging a climate ready profession: Shifting

paradigms and lessons learned as the Forest Service actively brings climate change knowledge into its organizational expectations and actions” at the [National Workshop on Climate and Forests](#) in Flagstaff, AZ this month. In his talk, he discussed climate change threats on national forests, including social and economic vulnerabilities, and the Forest Service’s response through the Climate Change Roadmap and Performance Scorecard, as well as climate change initiatives in State and Private Forestry, Research and Development, and International Programs. The workshop was sponsored by the Forest Service, National Institute of Food and Agriculture, Society of American Foresters, Arizona Cooperative Extension, Association of Natural Resource Extension Professionals, University of Arizona, and Northern Arizona University.

FROM THE FIELD

Kids and Climate Change

Students in the rural Verde Valley community of central Arizona heard a series of talks on "How Does Climate Change Affect My Local Environment?" given by Rocky Mountain Research Station Research Ecologist Jose Iniguez and Supervisory Biological Science Technician Brenda Strohmeyer. The scientists spoke with more than 1,000 students from first to eighth grade about how they can make a difference and reduce their carbon footprint by doing one or two daily activities differently. Information was also given to the students about how climate change is affecting wildlife and habitats within their local communities. The talks were in partnership with the Verde Valley Ranger District, Arizona State Parks, and the Audubon Society.

New Climate Change *Investi-gator*

The new climate change edition of the *Investi-gator* will be available for distribution July 1. This science journal, written for an upper elementary audience, features the climate science work of Pacific Northwest Research Station (PNW) scientists and their cooperators. The July edition was created by Science Quality Services in cooperation with PNW and the Cradle of Forestry Interpretive Association and addresses a variety of climate change related topics, including amphibian breeding patterns, modeling the movement of trees, the range of wolverines over time, and how glaciers provide food for animals that live in the ocean. After July 1, copies may be ordered from the [website](#) for free. For more information, visit the website or contact Barbara McDonald (bmcdonald@fs.fed.us).

Washington State Climate Projection Data

The [Climate Impacts Group](#) (CIG) of the University of Washington has produced data and graphics on historic and projected climatic and hydrologic trends for five major river basins in the western U.S., including the Upper Columbia and Upper Missouri. The FS Northern Region contributed a substantial portion of the funding for this project and is working in partnership with FS Region 6 to convert many of these files into formats easily used with FS software, producing additional products from these data and coordinating with the Great Northern Landscape Conservation Cooperative and other agencies to promote efficient data sharing and use. These data provide a foundation for accomplishing the vulnerability assessment and adaptation strategy elements of the FS Climate Change Performance Scorecard. Please email Jim Morrison at jfmorrison@fs.fed.us with any questions or comments.

OTHER EVENTS AND OPPORTUNITIES

Watershed Vulnerability Assessments Video Seminar

On Thursday May 26 9am-12pm MDT, the Stream Systems Technology Center will sponsor a VTC-based seminar. Representatives from eleven forests in all nine FS Regions are scheduled to give a 15-20 minute presentation on the results of their forest-scale watershed vulnerability assessments. Each national forest presentation will demonstrate how available information was used to provide managers with a relative rating of water resource vulnerability to climate change and how the results of the assessments can be used to develop recommendations on the responses each forest might take to best respond to predicted climate-based hydrologic change. Those who sign up for the VTC will have the opportunity to ask the presenters questions, and space is limited to 30 VTC sites. To participate and register a VTC site, please send an email Maria Wilsey (mewilsey@fs.fed.us). A subsequent seminar, to be announced, will be done via the web and be more readily accessible to those outside the Forest Service.

Climate Change Vulnerability Assessments Training Course

The National Conservation Training Center will offer this course for a second time August 15-18, 2011 in Shepherdstown, WV. The course is based on the January 2011 publication "[Scanning the Conservation Horizon – A Guide to Climate Change Vulnerability Assessment](#)." The guidance document is a product of an expert workgroup on climate change vulnerability assessment convened by the National Wildlife Federation in collaboration with the U.S. Fish and Wildlife Service. This course is designed to guide conservation and resource management practitioners in two essential elements in the design of climate adaptation plans. Specifically, it will provide guidance in identifying which species or systems are likely to be most strongly affected by projected changes and understanding why these resources are likely to be vulnerable, including the interaction between climate shifts and existing stressors. For more information and to register, please visit the course [website](#).

Communicating Climate Change Workshop

The National Conservation Training Center (NCTC) will hold a [workshop](#) September 26-30, 2011 to present accurate up-to-date science and effective communication techniques in order to train interpreters, public affairs officers, and other federal agency employees to communicate climate change to a public audience. All workshop sessions will be interactive, emphasize dialogue with participants, and focus on ways to bring the science of climate change to diverse audiences in meaningful ways. Participant preference will be given to FWS and NPS employees, though participants from outside these agencies, who are able to cover tuition and their own travel to and per diem expenses at the NCTC, will be considered. Register in [DOI Learn](#) and complete the supplemental application by June 15. To receive an electronic version of the supplemental application, contact Susan De Stephanis at susan_destephanis@fws.gov or 304-876-7494.

CLIMATE CHANGE RESOURCE CENTER (CCRC)

Climate Change Resource Center Library

The [library](#) of resources available through the CCRC provides a good starting point for searching for and compiling climate change literature. A bibliography lists abstracts and citations for peer-reviewed articles on climate change science, climate change impacts, and adaptation and mitigation activities.

In addition to primary literature, the CCRC library features outreach materials, fact sheets and briefings, a growing list of reading recommended by subject experts, and related web links. The CCRC continues to expand its library resources, so please contact us with recommended articles that you have found useful in your management work at ccrc@fs.fed.us.

PATENT PROGRAM

The Forest Service [Patent Program](#) helps scientists transition their research into the marketplace. Several FS inventions have been developed to more efficiently and more accurately collect climate change data. The inventions have been patented and are available for further cooperative research and/or licensing. This is the third in a series highlighting these inventions.

Measuring CO2 in Soil

Terrestrial ecosystems serve as significant sources and sinks for various gases, including carbon dioxide (CO₂). Thus, the ability to accurately measure the amount of CO₂ in soil, woody debris, and roots and stems is essential to understanding the loss of carbon in the ecosystem. FS scientists John Butnor, Christopher Maier, and Kurt Johnsen (SRS) have helped address this issue with their invention of the Automated Carbon Efflux System (ACES). The ACES uses chambers that are inserted into the soil and measure the CO₂ produced by the soil. It is a substantial improvement over prior methods because once the system is set up, the data generated can be collected at a later date. Improvements such as these will enable scientists to better understand the natural terrestrial carbon cycle in order to create better carbon sequestration techniques in the battle against climate change. Click [here](#) to view their patent. If you are interested in exploring collaborative research opportunities with the inventors or are interested in licensing this technology, please contact Janet Stockhausen at jstockhausen@fs.fed.us or 608.231.9502.

RECOMMENDED READING

The Psychology of Climate Change Communication: A Guide for Scientists, Journalists, Educators, Political Aides, and the Interested Public

Shome, D. and S. Marx

This [guide](#) by the Columbia University Center for Research on Environmental Decisions (CRED) details many of the biases and barriers to scientific communication and information processing. It offers a tool to help our societies take the pivotal actions needed to respond to climate change. Additional resources and readings on this subject can also be found on the CRED [website](#).

Facilitating Climate Change Responses: A Report of Two Workshops on Insights from the Social and Behavioral Sciences

Stern, P. C. and R. E. Kasperson, Eds.

The William and Flora Hewlett Foundation called on the National Research Council to organize two workshops to showcase some of the ways the behavioral and social sciences can contribute to the new era of climate research. [Facilitating Climate Change Responses](#) documents the information presented in the workshop presentations and discussions.

Social Norms: An Underestimated and Underemployed Lever for Managing Climate Change

Griskevicius, V., Cialdini, R. B., and N. J. Goldstein

This [paper](#) reviews recent field experiments that harness the power of social norms to influence pro-environmental behavior. It is widely recognized that communications that make social norms salient can be effective in influencing behavior. This low-cost persuasion strategy is considerably underutilized to promote behaviors to help reduce climate change.

Information Is Not Enough*

Chess, C. and B. B. Johnson [In S. Moser and L. Dilling, (Eds.), [Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change](#)]

Among the most difficult communication challenges is persuading people to act on a problem such as climate change, which is not immediately relevant or easily solved. Not surprisingly, after years of schooling, many people believe that information changes attitudes and behaviors. However, social science theory and much empirical research show that information is much overrated as a change agent. **This article is not available online, though excerpts from the book in which it appears can be found [here](#).*

LINKS

Center for Climate Change Communication

The George Mason University Center for Climate Change Communication (4C) was created to conduct unbiased social science research that will facilitate changes in human behavior, choices, and policies that contribute to climate change. They use social science research methods—experiments, surveys, in-depth interviews and other methods—to find ways of effectively engaging the public and policy makers in becoming part of the solution. Their past reports have included the [Climate Change in the American Mind Series](#) on Americans' climate and energy behaviors and [Global Warming's Six Americas](#), a groundbreaking audience segmentation analysis. These reports and others can be found on their [website](#).

Climate Central

Climate Central is an independent, non-profit journalism and research organization dedicated to helping mainstream Americans understand how climate change connects to them and arming audiences with the knowledge they need to make informed decisions about their future. They do this by: 1) Telling local and personal stories through multimedia journalism, 2) Breaking news with in-house scientific research and interactive graphics, 3) Generating high-quality, easily accessible content for use on their website, and 4) Employing a team of nationally-recognized journalists and scientists. More information and media can be found on their [website](#).

SUBMISSIONS

Please send your submissions on Forest Service climate change related activities to Cathy Dowd: cdowd@fs.fed.us. It's most helpful to have a short description with a web link to more information.

Contact information for the Climate Change Advisor's Office is on our [Intranet](#) site. Here you will also find materials like the National Roadmap for Responding to Climate Change, the Performance Scorecard, and Scorecard guidance, as well as previous editions of these updates.